JUNE 1955

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FIREMEN

SIXTIETH YEAR • NATIONAL FIRE PROTECTION ASSOCIATION

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PROTECTION

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Like their famed forefathers at Concord and Lexington, today's fire-fighting "Minute Men" have to spring into action fast. And, many times, they also have to keep the pressure on for long, wearing battles.

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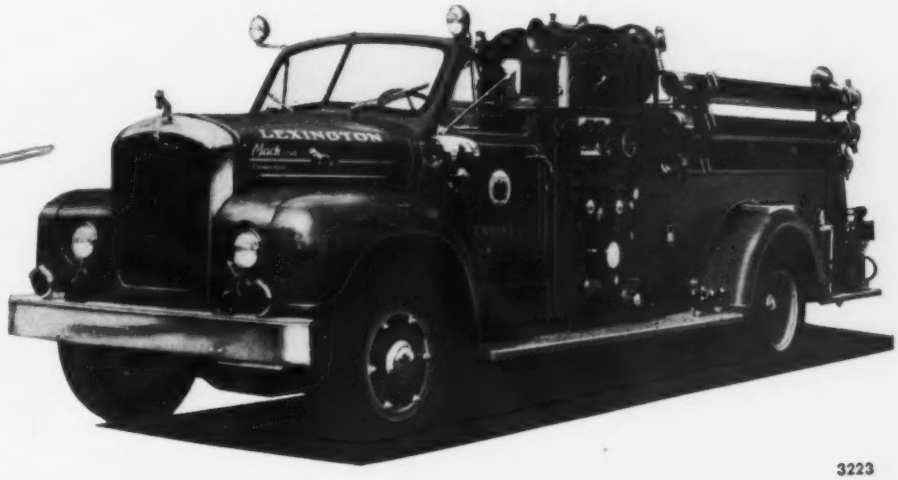

3223

TRIPLE COMBINATION PUMPERS—500 TO 1250 GPM . . . SQUAD AND HOSE WAGONS . . . 65', 75' AND 85' AERIALS . . . COMBINATION LADDER TRUCKS

SAVE LIVES...
SAVE MONEY...
Bi-Lateral
FLEXIBLE
...FOLDS FLAT FASTER!
...STAYS SAFE LONGER!
WHEN YOU BUY WITH YOUR CONSCIENCE YOU'LL
Bi-Lateral ®
Cheap hose is expensive in the long run—in lives as well as money! Bi-Lateral has been famous for quality since 1907—and we don't intend to endanger that reputation—or lives—by making "cheaper" hose to meet a cheaper price.
Cheap hose must be replaced in seven years—Bi-Lateral will give you twenty years of safe service.
We believe that safety and long run economy are more important than price alone in the purchase of fire hose. That's why we say, "when you buy with your conscience, you'll Bi-Lateral!"
FIRST AGAIN!
BI-LATERAL was first to construct hose with the bi-lateral non-creasing feature for longer life, lower cost in the long run and true safety. Folds flatter, handles more easily!
BI-LATERAL was first to change the pin-lugs to rocker lugs for safer, easier-handling couplings, lower-cost hose coupling maintenance.
BI-LATERAL was first to offer a real detergent, BI-KLEEN—made especially for fire-hose cleaning exclusively for Bi-Lateral by the Essentials Chemical Co. Oil and dirt rot hose—Bi-Kleen is safe, non-toxic, keeps hose "inspection-white," keeps it cleaner, safer . . . good for fire-house and apparatus, too!
AND BI-LATERAL was first to furnish free fire hose record cards to fire departments. They are still available—send for a supply!
Bi-Lateral ®
30 N. WACKER DRIVE, CHICAGO 6, ILLINOIS

What You Can Do for NFPA

Like any other successful organization, the NFPA relies upon the active participation of its members. The many technical standards issued by the Association represent a pooling of thought and effort of thousands of representatives from industries, fire departments, insurance organizations and many other fields of business and public service. The study of fire causes, fire incidence and fire behavior, demands frequent communication between members of the NFPA Staff and fire chiefs, fire marshals, arson and insurance investigators and other persons who can provide authoritative information which will lead to a useful analysis of fire incidents.

Fire chiefs can render a particular service to NFPA for this purpose. Through inspections, pre-planning of fires and actual fire fighting, members of their departments acquire much detailed information on the structure, contents, and fire protection limitations of buildings which become involved by fire.

When major fires occur in the United States and Canada, the NFPA Fire Record Department sends special report forms to the fire chiefs and other authorities in the municipalities concerned, requesting information which can lead to a proper study of each fire. If each fire chief who receives such a report would fill in the necessary information and any other pertinent details he can provide and return the form promptly to the NFPA Executive Office, he would be contributing greatly to the functions of the Association.

Good pictures of fire incidents are also needed. Readers of FIREMEN can inform all press photographers that the NFPA is interested in purchasing such photos (preferably 8 x 10 inches in size), but would also like to have the name of the chief commanding the fire fighting, and preferably a report by the chief.

Firemen

Volume 22 Number 6

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HENRY S. GERE, ADVERTISING MANAGER

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NATIONAL FIRE PROTECTION ASSOCIATION

A VOLUNTARY NON-PROFIT ORGANIZATION
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A Man's Duty

In Virginia, recently, three men were given fines and suspended sentences in the Trial Justice Court because they were found guilty of the charge of "failing to assist in fighting a fire." Testimony disclosed that the trio had been deputized by county forest wardens to fight a fire on April 5. After performing such duty in the morning they were permitted to leave for lunch, but did not return to the fire scene. One man was fined $25 and the other two were fined $10 each, and all three were given 30-day suspended sentences.

The severity of forest and brush fires during the summer months has caused many states to enact legislation through which any able-bodied man may be deputized into fire duty. When communities are threatened by large-scale forest fires manpower is a prime requirement and forest and fire department officials need the authority to request any citizen to perform reasonable duty for the protection of life and property. It is encouraging to note that this court ruling upholds the authority of the fire officials.

Since the early Colonial days in this country, law has required citizens to render assistance in a fire emergency. It was, no doubt, from such community spirit that engine chasing developed and has lingered through the years as the avocation of "sparking" or "buffing." While fire departments in many municipalities have such enthusiastic helpers or auxiliaries willing to assist in time of crises, rural communities may not be as fortunate, because of scattered population and the difficulties of responding to some fire calls. Hence, laws which permit fire officials to "commandeer" any able-bodied citizen into service must be enforced, on occasion, if only to remind an individual that he always must share the responsibility for the safety of his community and society.

Cover Picture

On May 6, Chicago fire fighters had to cope with another "Skid Row" hotel fire. Nine of the occupants of the building died and 12 were injured. According to reports, structural conditions in this building were similar to those encountered in the February 12 fire in the same area, when 29 men died. (See FIREMEN for March, 1955). In this incident, most of the victims were trapped in the cubicles which served as rooms when fire flashed rapidly through the structure.

As shown in the cover picture (*United Press Photo*), aerial ladder operators had to consider power lines and other overhead wires while maneuvering the ladders for rescue purposes. Note the intensity of the fire issuing from the second floor and enveloping the extension ladder, while in the circle at upper right one of the occupants awaits rescue.

"Sparky" on Television

On four successive Mondays during the month of May, "Sparky" was featured in a special series of Spring Clean-Up messages on the popular children's television program, Howdy Doody. The illustrated spot announcements included suggestions on how the youngsters could help parents to clean up around the house for fire safety.

The producers of the Howdy Doody program undertook this public service voluntarily. The show is the highest rated children's program on television today and reaches millions of youngsters. Sparky's appearance on this popular program brought impressive circulation of fire safety fundamentals to children throughout the nation.

Getting a Fast Attack with

Single Unit Operation

ONE of the interesting developments in the Boston, Massachusetts, Fire Department training program during the past year has been the development of special training in utilization of "single unit" operation for fast fire attack in residential districts. To date, more than 30 fire companies have participated in one-week training classes to develop teamwork in evolutions which are essential for fast attack with single piece engine companies or engine-squad companies.

Directing the program is Assistant Chief Leo C. Driscoll and District Chief in Charge of Training Andrew J. McElaney. An instructional outline covers the Department's official recommendations for these procedures. Assisting at the drill grounds are Fire Captain Drillmaster Cornelius F. Finnegan and Engineer Michael A. Connolly.

Basically, the single unit as operated by the department is a 750 gpm Class A pumper equipped with three preconnected 1½-in. lines, 2½-in. lines, 3-in. supply hose, and a deck gun. Two hundred feet of 1½-in. hose is preconnected to a swivel outlet and carried on the top or side of the pumper. In a rear compartment another 300 feet of 1½-in. hose is preconnected to a gated wye, and a 50-ft. line of preconnected 1½-in. hose is carried as a donut roll on the rear step as a "nuisance line." The pumper also carries 500 or more feet of 3-in. supply line, 800 or more feet of 2½-in. hose, and about 450 ft. of spare 1½-in. hose.

Photos on these pages show the step-by-step sequences of the attack operation as demonstrated at the Boston Fire School by members of Engine Company 21, including Lieutenant Peter P. Finnegan, Pump Operator Fred L. Finn, and Fire Fighters Bob Lundquist (No. 1), Bill Mantville (No. 2) and Jack Hurley (No. 3). Photos were by Fire Department Photographer Raymond T. Lonergan.

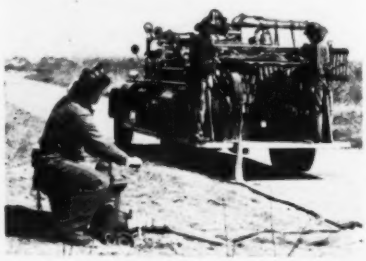
Connecting 3-inch Feeder Line

(1) Making approach to fire, officer designates hydrant and driver brings truck to stop so that hydrant man may drop off feeder line and bag with hydrant tools. For training purposes men on rear step are designated as No. 1 (left), No. 2 (center) and No. 3 (right).

(2) Hydrant man (No. 1) drops rope loop over hydrant to anchor 3-inch supply line which is fitted with a 4½-inch hydrant outlet connection. No. 2 man also drops off at hydrant with a tool bag.

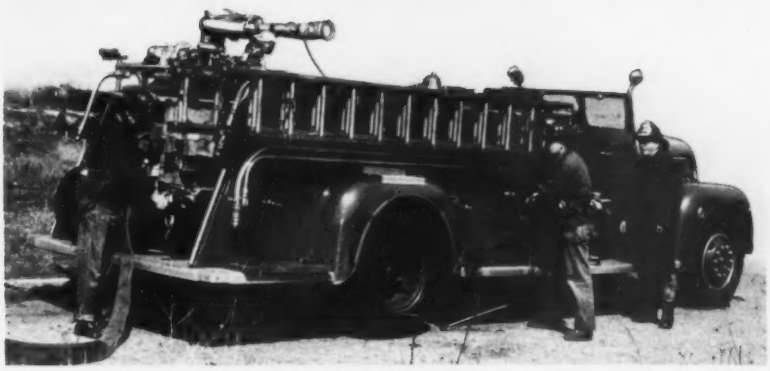
(3) Another view showing Nos. 1 and 2 men "dressing" hydrant. Note specially prepared tool bag which No. 2 man takes to hydrant. This contains hydrant wrenches, pipe for leverage, hose spanner, and an independent hydrant gate valve.

(4) Pumper lays supply line to fire with two hosemen on back step. In this picture the hydrant connection has been completed. In practice, the layout or "stretch" would be made while the hydrant was being dressed.



(5) Hydrant "dressed" with No. 2 man ready to charge supply line after it has been connected to pump inlet by No. 1 man who then calls for water. If a "working fire" is evident the supply line would be charged as quickly as possible. If the call is merely an "investigation" the supply line would be charged upon direction of the officer.

(6) Nos. 1 and 3 men on back step break 3-inch supply line at the next coupling in hose body to have ample line. Meanwhile, officer is locating fire or reporting to chief.



(7) Pump has stopped at fire. Officer has directed hoseman to run first attack line consisting of 200 ft. 1½-inch. hose with Elkhart S-O-S adjustable fog nozzle. This line is tapped from a swivel coupling directly off the top of the pump which permits the line to be run in any direction. The first attack line is sometimes carried across the top of the pump chamber. On the apparatus shown the line is carried on the side running board and is released by pulling two pins.

Running First Preconnected Attack Line

(1) Hoseman is running first attack line. Note that he is wearing a filter type mask to keep steam and heat from his face while using fog. Each piece of apparatus also carries at least two Chemox masks which are used where there is heavy smoke or likelihood of oxygen deficiency. Each hoseman also has spanner belt equipped with wet cell battery and Wheat light. Lieutenant is assisting in removing line from pump after directing hoseman to where line is wanted.

(2) The No. 1 attack line has been placed in service and is being supplied from the booster tank by the pump operator. Hydrant man is waiting for order to open hydrant. Note dry feeder line in street.

(3) (*Right*) On signal from hoseman at rear step that feeder line is connected to pump, hydrant man charges supply line. Normally, first attack line would be already in operation as shown in previous photo.

(4) No. 1 hoseman reports to pump operator that supply line has been placed in service. Pump operator then closes tank valve and takes supply from hydrant.

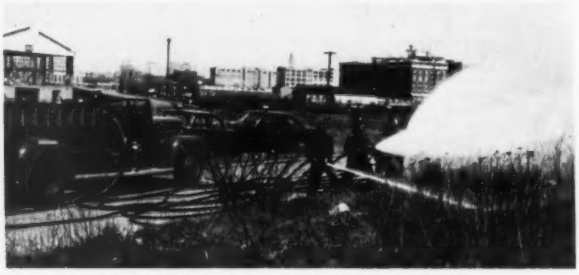
(5) Pump operator shown opening inlet supply gate to pump.

Running Additional Preconnected Lines

(1) Hydrant man and second hoseman receive signal from officer to run second preconnected 1½-inch attack line with Elkhart S-O-S nozzle. Also connected to the gated 1½-inch wye carried on a rear 2½-inch outlet is a 1½-inch donut roll provided as a short "nuisance" line.

(2) Second attack line is run from top left compartment. This is a 300-ft. line, ample to reach the third floor rear in most residential areas. An additional 400 ft. of 1½-inch line is carried connected in the upper right compartment.

(3) Two preconnected attack lines are shown in service discharging approximately 200 gpm. One stream is shown at 30-degree fog setting and the other as a straight stream.



(4) The officer has ordered the third preconnected 1½-inch line into service. Streams are shown in straight, 30 and 90-degree patterns.

Putting the 2½-inch Back-up Line in Service

A fundamental principle, followed by any good fire fighting organization, is to back up small, initial attack lines with a big line. Under the single unit operation employed in Boston this is accomplished by carrying a 2½-in. nozzle preconnected to the butt of the 2½-in. hose by a double male connection. One pumper outlet gate valve carries a double female connection for attaching this big line. This arrangement permits both the 3-in. and 2½-in. hose loads to be carried for normal hydrant-to-fire supply line operation, while also providing ready connections for any reverse layouts needed, including the back-up line.

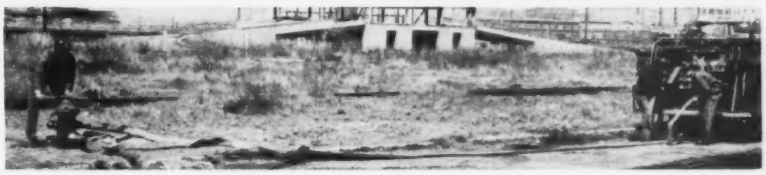
Incidentally, engine companies in the high value districts of Boston operate with separate pumpers and hose trucks, but all engine and ladder companies are being trained in single unit operation. During this training course each fire fighter takes his turn as pump operator and as No. 1, 2 and 3 man to become thoroughly familiar with every phase of these evolutions.

The officer has ordered the three 1½-inch lines backed up by a 2½-inch line having a preconnected Wornall fog-straight stream nozzle with 1-inch tip. As previously explained in FIREMEN, this nozzle may be operated by one man when necessary at flows up to 200 gpm. Various stream patterns from straight stream to full curtain fog are demonstrated. The total discharge of these four lines illustrated is approximately 440 gpm. While this result is achieved by a five-man company, usually, on the fireground, assistance would be given by laddermen or other companies. On actual fires it would not be unusual to supply two 1½-inch preconnected lines and two 2½-inch lines. The pump operator watches his residual pressure, and if in doubt, provides a second feeder or supply line to the pump. However, there are very few locations in Boston where the single 3-inch feeder will not provide 450 gpm.

Putting the Gun in Operation

(1) When laying two feeder lines from the divided hose body to supply the gun, the first line is secured by the rope loop. The second line is looped around the hydrant and snubbed by the hydrant man's foot. The picture shows the hydrant man placing wrench on hydrant which already has gate attached to spare outlet provided for use of another company which would connect by means of a 2½- to 4½-inch reducer. One feeder line is run from the 3-inch hose compartment and one from the 2½-inch compartment.

←



(2) Two supply lines (one 3-inch, one 2½-inch) have been laid from the hydrant to put the gun or wagon pipe in service. Note that a 2½-inch hydrant outlet has been gated to permit another pumper to connect to the hydrant by means of a 2½–4½-inch reducer. Most city hydrants will readily supply two pumpers thus permitting companies arriving on multiple alarms to get closer to the fire. If, as rarely happens, hydrant pressure should drop seriously, another supply line would be run to the first pumper and would be connected to the pumper at the hydrant. It has been found that the average layout from hydrant to pumper at the fire is 200 to 300 ft.

(3) Two short pieces of 3-inch hose cut to reach pump discharge outlets are carried connected to inlets of wagon pipe. Two supply lines are being connected to rear pumper inlets. The supply lines are laid simultaneously from the divided hose body. This layout will supply the flow needed for the JN-200 fog nozzle.

(4) Portable wagon pipe delivering straight stream through Elkhart JN-200 fog nozzle (approximately 550 gpm at 100 lbs.). If supply is limited, or only one supply line is connected, the nozzle opening may be restricted to reduce the delivery while maintaining effective pressure at the nozzle.

(5) The JN-200 fog nozzle discharges 650 gpm at 100 lbs. when operated with 30-degree fog patterns as shown. In practice the pump operator watches his residual pressure and discharges the maximum volume received up to 150 lbs. nozzle pressure, taking care not to exceed the safe operating speed of the pump. It has been found, however, that excessive nozzle pressures may adversely effect the pattern of the stream. If the supply is seriously limited, a size smaller adjustable fog nozzle would be used.

(6) Portable wagon pipe delivering full curtain fog through Elkhart JN-200 fog nozzle (725 gpm at 100 lbs.). Two hydrant lines supplying pump. Where hydrant supply is good, several preconnected 1½-inch lines might also be supplied in addition to the gun, providing the required flow can be safely handled by the pump. Most pumpers have three 2½-inch pumper inlets and the 3-inch hose has 2½-inch couplings. With this operation the full capacity of a 750 pumper can be discharged in a matter of seconds.

"In-Service" Maintenance of Pumper Accessories

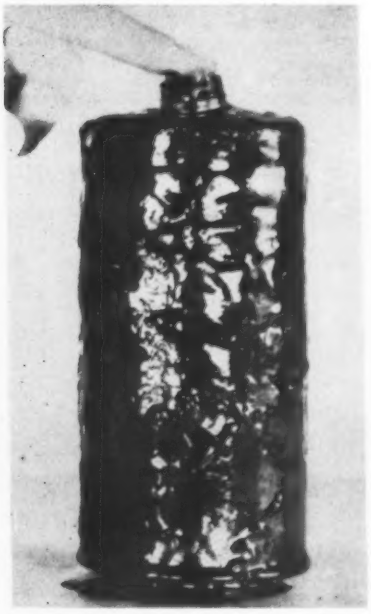
By Hubert Walker, Manager, Motor Fire Apparatus Sales Engineering
American-LaFrance-Foamite Corporation, Elmira, New York

From an address at the 27th Fire Department Instructors Conference, Memphis, Tennessee, February 22–25, 1955

THE practice of "in-service" maintenance of fire apparatus has long been recognized as a sound and effective way to obtain a maximum of dependability and hours of effective operation without shutdown. Such maintenance practice not only decreases the hours of "out of service" per year, but actual repair and replacement cost over a period of years is substantially reduced. This has been proved many times by fire departments who have established such a program.

"In-service" maintenance means checking, adjusting and correcting such items as may be handled in the fire station, when this maintenance will not require taking the pumper out of service, nor affect its ability to respond to an alarm.

There must be assignment of certain responsibilities if the system is to work effectively. There must be cooperation between the drivers and the mechanics. If the driver is not also the pump operator, the pump operator should cooperate and share the responsibility.



Oil filters in this condition are completely covered with tarry material and are not only useless but also represent a dangerous condition in the engine.

The driver should be responsible for checking daily, or after each run, the following items:

Radiator water level; anti-freeze solution (for proper temperature range in winter); engine oil level (adding oil if necessary to bring to proper level); adding oil to the tank for the primer pump; checking batteries for charge condition. (Specific gravity should read 1.250 to 1.270). Checking tires for proper air pressure and for cuts and bruises. (Report at once any cuts or bruises which indicate imminent failure). Checking for water or oil leaks observed in operation or when the apparatus is standing in the fire station; and refilling the water tank.

Any fire extinguishers which have been partially or completely discharged should be immediately replaced with fully charged units.

Gas masks of the type requiring oxygen, or which use a cannister for production of oxygen, should have the oxygen units replaced if they have been used at a fire.

Oxygen-acetylene cutting units which have been used should have both the acetylene and the oxygen units replaced with fully charged units so the equipment will be fully serviceable on the next demand.

If ladders or pike poles have been used, they should be inspected for any evidence of damage. Wooden pike poles and ladders where varnish has been scraped off should be sanded and revarnished. This will require taking these units off the truck and replacing them with spares.

A ladder should be further inspected for loose rungs and any evidence of cracks, which, if they exist, should require the ladder to be replaced with a reserve or spare unit. If the ladder is of metal, such as aluminum alloy, it should be further inspected for evidence of having been subjected to heat. This condition will show up in discoloration, a sort of rainbow colored effect around the edge of the heated area. This ladder should be subjected to weight testing before going back into service. If the ladder has been subjected to temperatures of 700° F. or above for any period of time, the discoloration would indicate the alloy has been annealed, that is the benefits of heat treatment have been removed, and thus the ladder will only have about half its strength in the affected area. This condition will result in a service failure of the ladder in subsequent use. Ladders very definitely should be tested in agreement with the procedure outlined in the book, "Fire Department Ladders" which is published by the Case-Shepperd-Mann Publishing Corp., 24 West 10th Street, New York 18, New York. (*Also refer to NFPA Standard 193 — "Standard Procedure for Aerial Ladder Testing" — 20 pages, 50 cents per copy, discount for quantity purchases. —Ed.*)

Typical oil sludge resulting from cheap grade of oil. Note that it is thick and will not flow or run freely.

Report in addition any of the following that may appear to be malfunctioning: brake system; steering; ease of starting; lights; warning devices; windshield wipers; clutch; pump; and pressure control devices.

Most firemen assigned as drivers, or pump operators, are fully capable and qualified to carry out the duties described here. It is a matter of departmental administration to have these duties clarified if the maintenance program is to be effective. This applies equally to volunteer and paid departments. Posting such a list of maintenance duties in each engine house serves as a reminder to those who operate the apparatus.

ROCKFORD FIRE DEPARTMENT

APPARATUS DRIVER'S MECHANICAL REPORT
To be filled out once each month.

DATE_____ COMPANY NO._____ TYPE OF APPARATUS_____

MAKE_____ CHASSIS NO._____ MODEL_____

SPEEDOMETER READING_____ ENGINE MILES_____

PUMP HOURS SINCE LAST REPORT_____ TOTAL PUMP HOURS_____

The following inspection shall be properly maintained daily. Check engine oil level, radiator level, water and oil leaks, wheel lugs, brake controls, lights, siren windshield wiper and all other instruments. Tires for cuts and bruises and batteries.

MARKING CODE (O.K. ✓) (REPAIRS NEEDED O) (ADJ. MADE X)

1. Check steering for excess play		20. Auxiliary Generator & Floodlights	
2. Foot Brake Pedal reserve		21. Portable Pumps	
3. Hand Brake		22. Chain Saw	
4. Transmission Shift Lever and Safety Locks		23. Ladders	
5. Pump Shift Levers & Safety Locks		24. Hand Pumps (both strokes)	
6. Clutch		25. Tool Kit	
7. Starter - both switches		26. Pikepole, Axes, etc.	
8. All Lights, head, tail, compart. etc.		27. Aerial Ladder operation	
9. Windshield Wipers		28. Any other Misc. Appliances or fittings	
10. Clean, tighten Battery Connections, inspect cables.		29. Check all Masks & Breathing Equipment	
11. Check for Gasoline, Oil & Water leaks (engine hot and running)		30. Body or Other Damage	
12. Check all doors, latches, handles & glass.		31. General Performance and appearance of Apparatus.	
13. Check all equipment brackets and holders		When any above item is marked (O) an explanation shall appear under remarks with that item's listed number.	
14. Check all pump controls			
15. Check pump governor		(Example: 9. Wiper Blades need replacing)	
16. Check all discharge & suction port caps and gaskets.		REMARKS:	
17. Check all drain valves			
18. Examine soft suction for damage or wear			
19. Check all nozzles			

Driver's Signature

Officer's Signature

(Left) **Report form of the Rockford, Illinois, Fire Department. Copies of this form are filled out once each month by the alternate drivers of the apparatus, then submitted to the master mechanic. Items listed for check or repair are investigated by the repair crew and "in-service" maintenance is carried out, or the truck is placed "out of service" and repaired in the shop. Note that at least 25 of the 31 items on this sheet can be checked and adjusted without taking the truck out of service.**

Interior of oil pan showing gummy viscuous residue of an oil which would not stand up in service. This oil sludged rapidly and eventually plugged the oiling system in the engine, causing burned out bearings, scored pistons and cylinders, and broken rings. The few cents saved by purchasing such oil is poor economy, as one failure of the engine represents a greater expenditure than any sum saved by using poor oil.

The master mechanic and the men in the maintenance or repair shop should be responsible for all maintenance beyond the items mentioned as drivers' responsibilities.

WE HAVE many fire schools which offer a variety of training and instruction for firemen and fire officers, but we seem to be neglecting the men who keep the equipment operating. They have to rely on their basic mechanical knowledge and what they can glean from the manufacturers' manuals. The maintenance information in those manuals is rather meager, since they are written essentially for pump operators.

Over three years ago Mr. Mark Brosier, Director of the Iowa Fire School at Ames, began to formulate plans to have eventually a special course on maintenance of fire apparatus. Better maintenance will be achieved when more of our fire schools can offer such courses. This is the only way that specialized construction and operating characteristics of fire apparatus engines can be properly taught. In the meantime, we find that some departments have made excellent progress through their own initiative, and have established excellent maintenance procedures.

By courtesy of Chief Wayne E. Swanson, the Rockford, Illinois, Fire Department, we have copies of three report forms in use in the Rockford Fire Department. (See illustrations at left and on next page.)

(Right) **Work sheet used by mechanic for the 4-month, or 1,000-mile inspection period, includes items not on the 30-day inspection sheet, such as oil change. This same form may be used for annual inspections. When completed this report is filed as a permanent record of the truck's maintenance history.**

Rockford Fire Department

PREVENTIVE MAINTENANCE WORK SHEET REPAIR ORDER NO.

"A" SERVICE — TO BE PERFORMED EACH 1000 MILES OR EVERY 4 MOS. PERIOD

"B" SERVICE — TO BE PERFORMED EACH 4000 MILES OR EVERY 12 MOS. PERIOD

☐← INDICATE SERVICE TO BE PERFORMED →☐

DATE_____ VEHICLE NO._____ COMPANY NO._____

"A" SERVICE	"B" SERVICE	MARKING CODE (OK ✓)	A	B	ADJUSTMENT MADE (0)
		1. Check Drivers Report			27. Springs For Broken Leaves And Alignment
		2. Fan Belt Adjustment			28. Muffler and Tailpipe
		3. Cooling System Hoses			29. Tighten Spring U-Bolts
		4. Radiator Core For Leaks			30. Tires - Cuts - Pressure Unusual Wear
		5. Starter and Generator Commutator and Brushes			31. Tighten Wheel-Lug Nuts
		6. Distributor - Cap -Rotor and Breaker Points			32. Tighten Axle Flange Nuts
		7. Generator Regulator			33. Master Cyl Fluid Level
		8. Tighten Manifold Nuts Check for Leaks			34. Fifth Wheel
		9. Engine Compression Reading			35. Road and Pump Transmission Oil Level
		1.___ 2.___ 3.___ 4.___			36. Rear Axle Oil Level
		5.___ 6.___ 7.___ 8.___			37. Drain and Refill Crankcase
		9. 10. 11. 12.			38. Replace Oil Filter if Necessary
		10. Inspect and Regap Spark Plugs			39. Clean Air and Fuel Filters
		11. Adjust Valve Lash			40. Oil All Linkages
		12. Set Ignition Timing			41. Wheel Bearings Inspect and Repack
		13. Adjust Carburetor at Idle			42. Inspect and Adjust Brakes
		14. Battery Breakdown Test			43. Lubricate Chassis
		15. Radiator Shutters			44. Flush Cooling System Add Rust Inhibitor
		16. Hand Brake			45. Door Hinges Latches Window Glass Regulators
		17. Lights			46. Check for Oil and Water Leaks
		18. Siren and Bell			47. Cleanliness of Apparatus
		19. Windshield Wipers			48. General Appearance of Paint and Metal
		20. Instruments and Gauges			49. Roadtest - Check Brakes, Steering, Operation of Clutch, Transmission, Engine Performance Rattles
		21. Choke and Throttle			50. Engine Oil Pressure (Hot) Idle 1000 RPM
		22. Pitman and Steering Arms Drag Link and Tierod			51. Engine Temperature
		23. Clutch Pedal Clearance and Linkage			52. Check Auxiliary Generators Pumps etc.
		24. Universal Joints and Flanges			Over
		25. Hydrovac Inspect and Oil			
		26. Drain Air Tank			

In the check list for the driver or pump operator, Item No. 3 is the addition of engine oil. In this work sheet (page 11), which includes the oil change, we wish to stress the importance of providing a high grade oil of the proper viscosity rating as recommended by the engine manufacturer.

If you pay 45c a quart for oil, which is about the top price today, and you change oil regularly every four months regardless of the mileage, you will, during the next twenty years, for all your engine oil, have spent about *one-half of the cost of one engine failure* from lack of proper lubrication which would cause burned out bearings. Changing the oil at frequent intervals and using top quality oil is the cheapest insurance of continuing operation of your vehicles.

Buy only oil made by a reputable manufacturer and get the best grade. Many manufacturers make several grades of oil, all of which will have the same viscosity rating, but there is a tremendous difference in the oils, even though made by the same manufacturer. Cheaper grades of oil will not have stability in that they will break down under conditions of heat and use, losing viscosity. They will oxidize rapidly, that is, have a burning effect, producing an excess of varnish and carbon to plug rings and stick valves. Your oil filter will begin to look like that shown on page 10.

A good "in-service" maintenance practice is to inspect the gaskets in all suction connections after each use. Cuts or scores on the gasket face call for a new gasket. If the gasket has nicks or cuts that extend into the seating area, use a new gasket.

One "in-service" maintenance practice that has paid good dividends in easier and more reliable operation is oiling of all discharge gates and hose line shut off valves after every use. Where water contains a high mineral content, this practice is almost mandatory.

When air foam systems are used on a pumper, it is essential that the entire system be flushed with clear water after each use.

As an aid to better maintenance, one manufacturer is revising the operating and maintenance manual to show every step in maintenance procedure with photographs and a very minimum of copy. This will make for better maintenance as each required operation will be clearly shown.

It may sound like a paradox, but the more you spend for maintenance, the greater the saving in cost. The answer, of course, is "timing." That's why "in-service" and preventive maintenance actually saves dollars. Your extra dividend is greater operating reliability.

UAN	PART NO. OR DESCRIPTION	COST
	TOTAL PARTS	
	SUBLET REPAIRS	
	TOTAL SUBLET REPAIRS	

Rockford Fire Department № 206

SHOP REPAIR TICKET

APPARATUS OR VEHICLE NO. _____ COMPANY NO. _____

SPEEDOMETER	PUMP HRS.	DATE IN	DATE OUT

MECH	DESCRIPTION OF WORK DONE	LABOR

Flammable Liquids Notebook

Part II of a series which can be used in training fire fighters in the properties and hazards of flammable liquids and recommended techniques for fighting fires involving flammable liquids.

IGNITION TEMPERATURE. A characteristic of flammable liquids of interest to the fire fighter is ignition temperature. The ignition temperature of a substance, whether solid, liquid or gaseous, is the minimum temperature required to initiate or cause self-sustained combustion independently of the heating or heated element. In other words, a flammable liquid like other materials such as wood, coal or gas, will, at a certain temperature, burst into flame. This temperature will vary considerably with the material and the conditions.

It is important to distinguish between flash point temperatures and ignition temperatures. When a flammable liquid is heated to its flash point, the vapors can be ignited by an open flame or spark. At ignition temperature, the vapors of a flammable liquid will ignite spontaneously because of the conditions created by that amount of heat, and a flame or spark need not be present for ignition to occur.

The Eleventh Edition of the NFPA Handbook of Fire Protection in Chapter 12 lists the ignition temperatures of various flammable liquids. These temperatures are based upon laboratory tests, in compliance with the test procedures established by the American Society for Testing Materials entitled "Standard Method for Autogenous Ignition Temperatures of Petroleum Products," ASTM D286–30. In brief, this test consists of partially submerging a cone-shaped, heat resistant glass flask into an iron pot which is filled with a solder alloy bath. This alloy has a melting point below the anticipated ignition temperature of the liquid being tested. The solder bath is heated slowly and at various temperatures small amounts of the sample are placed in the flask. If the sample fails to ignite, the observor displaces the gases and vapors completely by air, before raising the temperature of the solder bath and adding another small sample, continuing this procedure until the sample ignites. Since the ignition temperatures are listed by this specific laboratory test method it can be understood readily that "in the field" the ignition temperature of a flammable liquid may vary considerably, depending upon the actual conditions of exposure to the heat source.

Examples of substances heated to their ignition temperatures may provide better understanding of why some fires occur. A fairly common cause of fire during the home canning season is the melting of paraffin. Paraffin wax has an ignition temperature of 473 degrees Fahrenheit, and a closed cup flash point of 390 degrees F. When heated in a pan placed directly on the stove, the wax can easily be heated to well over 473 degrees, causing it to ignite. The means of prevention of this type of fire is to melt the paraffin in a pan immersed in another pan with water in it. This prevents the paraffin from being heated above 212 degrees, the boiling point of the water.

Probably the most common fires caused by substances being heated to ignition temperature are those involving very hot insulated oil lines. Frequently, in industrial installations, it is necessary to heat oil and transfer it from one place to another. It is customary, during such operations, to insulate the oil line to prevent loss of heat. In the event that this line develops a leak, the insulation becomes soaked with oil and gradually the oil heats to a point above its ignition temperature. If this heated oil reaches the air at the surface of the insulation, fire results.

IT IS important to remember, when evaluating the fire hazard of a high flash point liquid, that when it is heated you must consider not only the ignition temperature but also the effect of heat upon vapors after the flash point temperature is reached. In the examples describing how fires originate from liquids being heated above their ignition temperature, it should be considered also that an open flame or spark will ignite the material at a much lower temperature because the flash point is reached considerably before the ignition temperature. (See April, 1955, FIREMEN.)

As in the case of flash point, there are many variables that should be evaluated. Take the case of the paraffin wax which has an ignition temperature of 473 degrees by the ASTM test method. In other words, if paraffin wax is heated slowly in a conical shaped container with no draft present, you would have a fire when the paraffin reached 473 degrees. If the same paraffin is heated in an open container with no draft present, fire would not occur until the temperature was considerably above 473 degrees. An even higher degree of heat would be necessary for fire to occur if there was a draft of air blowing across the liquid surface. In other words, the difference in materials, depth of liquid, whether it is in an open or closed container, convection currents, spills on hot metal, and draft are among the factors to be considered in evaluating fire hazards or in determining the cause of a fire involving flammable liquids.

There are many possible causes for an explosion of a container of flammable liquids during fire conditions. These causes should be considered by all fire fighters. With a few chemicals, explosions may occur at certain temperatures, which may be the flash point or boiling point of the chemical. These chemicals are also listed in the NFPA Handbook of Fire Protection.

When explosions occur in flammable liquid containers, it is because a source of ignition is present to ignite the vapors when they are at flash point. Another common cause of container explosions is simply pressure rupture, which could occur with water as well as flammable liquids. When high flash point liquids reach their ignition temperature and sufficient air is present, explosive conditions may occur, although it would be almost impossible to distinguish between an ignition explosion and a pressure rupture in such an incident.

Trends and Problems of the Fire Service

Excerpts from an address by C. Gray Burnett, former Chief of the Ottawa, Ontario, Fire Department and now President of the International Association of Fire Chiefs. His talk was a feature of the session on municipal and rural fire protection during the 59th NFPA Annual Meeting, Netherland Plaza Hotel, Cincinnati, Ohio, May 16–20.

THE most important trend in the fire service today seems to be that its members not only realize the growing problems of fire fighting and fire prevention, but are very definitely trying to do something about them. There seems to be a general seeking for better education and better research into the entire fire safety problem, and the corresponding development of the fire services towards professional status.

One of the leaders in this field is a Past-President of the IAFC and a member of the NFPA Board of Directors, Fire Chief John Alderson of Los Angeles, under whose guidance the University of Southern California is now offering a degree course for fire officers. For many years the Oklahoma A. & M. College, whose fire training textbooks are used in both the United States and Canada, has had a two-year course for fire protection, the students of which can proceed to take a general engineering degree. Some states and other colleges also have had short courses for fire service personnel.

This trend is not only found on this continent. Two years ago I visited the British National Fire College in England which has now been operating for nearly fifteen years and where a variety of courses for fire services are offered under the sponsorship of the British Government. In England, the rule is that both fire officers and fire chiefs are chosen only from those who have passed the strict examinations of the Institute of Fire Engineers. In Great Britain, where pensions are on a national plan, and salary categories are set nationally, the bright fire officer is not confined to his home municipality but can seek promotion anywhere in the country without any loss of his pension rights or other privileges. On the European continent, too, the education of the fire fighters is growing. For instance, under the Swedish State Fire School, allied closely with the University of Stockholm, there is an eighteen-month course which must be passed by any individual who hopes to become a city fire chief. In Rome there is a multi-million dollar fire college with a two-year course for fire officers on the level of a junior engineering diploma.

Nearly all of the United States and the Provinces of Canada have substantial and active educational programs for their fire services. In Ontario, where I reside, there is an interesting example of this trend. In this Province of over 5,000,000 population, some nine new city fire chiefs were chosen in 1954, all for full-time paid fire departments. All but two of these chiefs and their senior officers were chosen by competitive examinations.

Chief C. Gray Burnett, President of the International Association of Fire Chiefs, addressing the 59th NFPA Annual Meeting in Cincinnati.

There is another general trend in the fire service for which a debt of gratitude is owed to the officers of the International Association of Fire Fighters, whose Secretary-Treasurer, George J. Richardson, has been on the NFPA Board of Directors for many years.

This is the trend towards better salaries and better working conditions for fire fighters which, in turn, has enabled fire departments to attract a better class of recruit. Here again, I think that Canada has not been behind the rest of the continent. Again referring to Ontario, we have provincial legislation fixing the maximum work week of fire fighters and fire officers at 56 hours. There is a Workmen's Compensation Act covering both paid and volunteer fire fighters, whenever or wherever they may be called upon to perform their duties. We have compulsory pension retirement plans for all full-time fire fighters and officers, and we hope to extend this pension plan to the widows of fire fighters within the next year. We have collective bargaining and compulsory arbitration for all matters of salaries and working conditions. Several other Canadian provinces have similar legislation and I believe this trend is growing too in the United States.

THERE is, also, the new and important field of fire research. Substantial work in this field has been carried out in laboratories and in field studies such as in "Operation Fire Stop" in California last year.

In England the British Government has had for years a very extensive fire research laboratory near Elstree, under Director S. H. Clarke. In Ottawa, fire research is a major programe under the National Research Council of Canada, which is a unique national research organization. The Council does not fit into the regular departmental framework of the Federal Government but is a special public agency responsible to the people of Canada through the Privy Council Committee on Scientific and Industrial Research. The president of the Council reports annually to Parliament through this Committee.

The Division of Building Research was instituted after most careful consideration in August 1947, after some years of delay during the war, under the leadership of Mr. R. P. Legget. As part of this Division, the Fire Research Section is concerned with work which will improve safety in buildings in respect to fire. One way in which the National Research Council is contributing to the solution of this problem is through the National Building Code of Canada.

Fire research is of major interest to me, not only as President of the International Association of Fire Chiefs, but also from a more personal standpoint in

that it is the field of work in which I am now personally engaged. My major activity at the moment is to be in charge of a very intensive campaign of investigation and research as to why people are dying in fires, considered especially from the standpoint of how the building materials contributed to the cause of death. The report of the first year of this fatality investigation is expected shortly, but I can anticipate two very important principles which are being discovered from our investigations: — (1) So far this investigation is being confined to the Province of Ontario, which has a population of somewhat over 5,000,000 persons. We are finding that a large proportion of fire fatalities are occurring in those areas of the Province which are without fully paid fire departments and without organized building by-laws and/or fire inspections; and (2) In fires in various types of residential properties, we find that there appears to be a direct relationship between the chance of death by fire and the number of people residing in the building.

TEN years ago, no one in the fire service and certainly none of the general public dreamed that within a few short years there would be a need to learn about radiation hazards if fire fighting was to be properly carried out. Since the atomic age was ushered in with the explosion of a bomb ten years ago, the problems of this new hazard have grown to where we have the recent February announcement of the U. S. Atomic Energy Commission that the radioactive fallout from a single hydrogen bomb could cause the death of everyone in an area of several thousand square miles who was untrained and took no protective measures.

As an excellent example of the advanced technical education for today's fire fighter, and of the research which must be done in technical subjects, I commend to you the latest publication of the IAFC entitled "Radiation and Monitoring Fundamentals for the Fire Service." This manual is designed specifically to help the fire fighter to protect himself under the new hazards of radiation so that he can improve his fire fighting and protect the general public and property. (See review of this publication on page 12 of this issue—Ed.

But fire service responsibilities cannot be dropped completely all over the continent just because some enemy bombers appear over Alaska or Greenland. It seems to me that in addition to training thousands of troops to work under nuclear bomb conditions, we should be giving the fire fighters this battle training too. I doubt whether the orders of any civil defense director can relieve the fire departments of their responsibility to protect the public against fire.

If the fire services are to be called upon to take the same risks as military troops and accept the same high level of radiation dosages, for their own protection they should have the same training and the same instruments as the troops. I am sure that the professionals in the fire fighting and engineering services can, when we get together, develop a program as to how we, too, can best defend our countries from enemy fire attacks.

New York State Training

A 68-page book containing lesson plans for an advanced course in fire fighting has been published by New York State's Bureau of Fire Mobilization and Control. According to Michael H. Prendergast, State Director of Safety, the course has a potential student body of 127,000 firemen. The Bureau, under the direction of B. Richter Townsend, Chief, authorized the Division's Training Coordinator, Dr. Leonard C. Silvern and Donald M. O'Brien of the Bureau, to observe nearly 1,800 classes held in 55 counties to determine whether improvements in training and fire fighting methods were necessary.

The new "Advanced Course — Lesson Plans" is one of three courses in elementary firemanship in the 45-hour State Fire Training Program. There are also basic and graduate courses.

Building Code Draft Hearings

Public hearings were scheduled last month in New York State for discussion of the proposed State Building Construction Code applicable to business, mercantile, industrial and other non-residential buildings. When issued this Fall, this publication will provide New York State municipalities with a complete building code. The New York State Building Code Commission, of which Brig. Gen. Edward J. McGrew, Jr., is chairman, has previously promulgated codes applicable to one- and two-family dwellings and multiple dwellings. The residential codes are in force in more than 160 municipalities in New York State by which the state code has been accepted. Members interested in reviewing the public-conference draft covering non-residential construction of the State Building Construction Code should request copies from the New York State Building Code Commission, 1740 Broadway, New York 19, N. Y.

Occupancy Fire Record — Printing Plants

LATEST in the series of occupancy fire records prepared by the NFPA Fire Record Department is a 12-page survey of fire experience in newspaper and commercial printing plants. The analysis of 76 fires reported in this bulletin shows that presses, exhaust ducts and oily rags were the most serious of special hazards which led to fire losses. Careless smoking and improper disposal of rubbish topped the list of common hazards. Copies of the bulletin may be obtained from the NFPA Publications Department at fifty cents each with generous discounts allowed for quantity purchases. Ask for FR 55-4.

Forest Fire Damage

FOREST fire damage to national forests during 1954 amounted to $3,700,000, according to reports from the United States Department of Agriculture. Forest Service field offices reported 7,369 forest fires — 3,425 of them man-caused, and 107,656 acres of national forest land burned with resultant timber damage estimated at $1,062,489.

Ground cover such as tree, grass and shrubs was destroyed with damage to watershed amounting to an estimated $2,227,455. Wildlife, recreation and forest areas had a fire loss of $447,033.

FIRES IN THE NEWS

Greensboro, North Carolina, May 1. (*Photo by Joel Dawson*) Fire started in this 150- x 50-ft. wooden grandstand while a fair was in progress. Personnel of the fair grounds attempted to extinguish the fire before calling the Greensboro Fire Department. Four engines and a ladder truck responded and fire fighters used four 2½-in. lines and five ½-in. lines, but, as shown in photo at right, a number of autos were ignited by intense radiant heat before the fire was controlled.

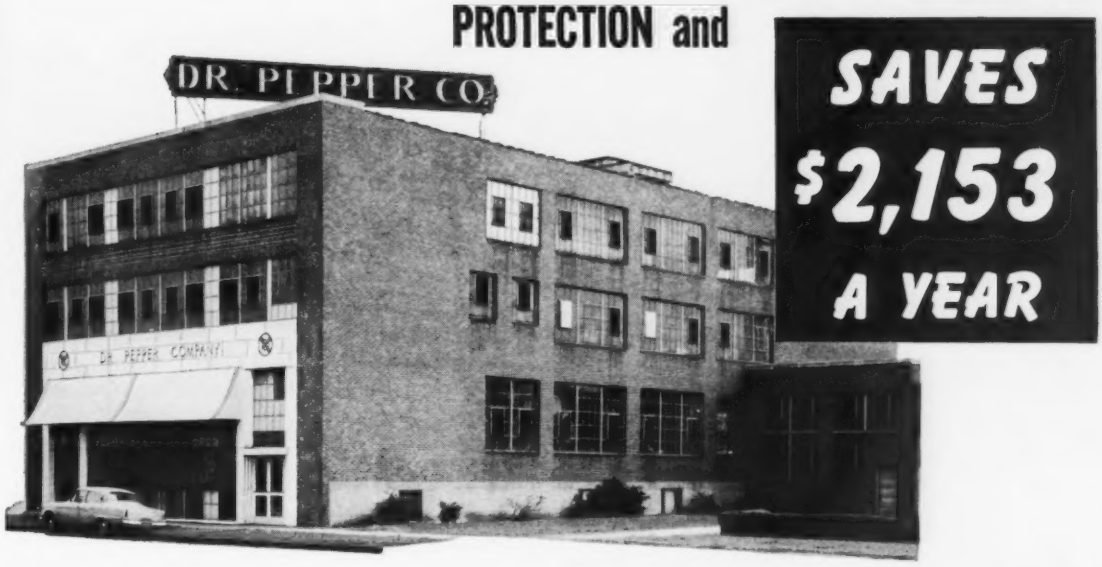
Hammond, Indiana, May 5. (*Wide World Photo*) An estimated $2,800,000 loss resulted when a rubbish fire ignited a wood platform of this unsprinklered 86,000 sq. ft. 3-story warehouse containing flammable liquids, chemicals, lumber and food supplies. A 40 mph wind helped flames to ignite 3 closely exposed buildings. Hammond fire fighters received mutual aid assistance from fire companies of Gary, East Chicago, Whiting, Calumet City, and Lansing, Illinois.

East Lansing, Michigan, April 29. Estimated fire damage to this 1-story furniture supply warehouse amounted to $300,000, after a fire started in a storage area near a boiler room. Fire fighters were unable to cut through the asphalt-covered metal roof, but managed to keep the fire in one wing of the L-shaped building. Reports stated that the alarm was delayed for 15 to 30 minutes.

High Point, North Carolina, May 10. (*Photo by Joel Dawson*) This plywood factory also became involved when a grass fire spread out of control. Several fire companies which responded to alarms found the building completely involved, so effofts were concentrated on protecting exposures. Loss was estimated at approximately $250,000.

Columbia City, Indiana, May 5. (*Associated Press Wire Photo*) Loss was estimated at nearly $1,000,000 when this 1-story concrete block factory and machine shop became involved. Four men died in the rapid spread of fire which was intensified by a 45 mph wind and by deposits of oil on machinery and combustible materials in the building. In addition to the Columbia City Fire Department, nine other departments responded on mutual aid.

DR. PEPPER COMPANY branch syrup plant, Birmingham, Ala., protected *Automatically* gets better FIRE and BURGLARY PROTECTION and



"The ADT automatic protection used in our Birmingham Syrup Plant has not only been a great benefit to us from an efficiency standpoint, but each year it has lowered our building protection costs $2153."

E. A. Millican

Vice President in Charge of Production

Preservation of its continuity of production is highly important to the business of Dr. Pepper Company, well-known manufacturer of soft drinks. It was for this reason that company officials turned to ADT for protection of a key facility.

ADT Central Station Burglar Alarm and Aero Automatic Fire Alarm Services are combined to give complete *automatic* protection against fire and burglary. These services—more effective and reliable than other methods—actually cost less, as evidenced by Mr. Millican's statement reproduced above.

Whether your premises are new or old, sprinklered or unsprinklered, the appropriate ADT Fire Alarm Service will detect fire and notify the fire department *automatically*. ADT Burglar Alarm Service will *automatically* summon police when burglars attack. ADT Heating and Industrial Process Supervision will *automatically* detect and report other abnormal conditions.

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On Home Inspections

The following letter appeared in the May issue of the News Letter of the International Association of Fire Chiefs. It was addressed to Jay W. Stevens, Secretary-Treasurer of the Pacific Coast Inter-Mountain Association of Fire Chiefs, who has been one of the foremost advocates of house-to-house inspection programs by fire departments.

Dear Sir:

We have set May 8th as the "kick-off" date for our 3rd Annual Home Inspection Campaign. All of us are looking forward with enthusiasm and great expectation to being able to get back out in the field and pick up where we left off last summer, after completing a very successful Home Inspection Campaign in which we inspected over 26,000 homes. It was a very pleasant surprise to us that we found only three homes out of over 26,000 which objected to having their homes inspected.

Our first home inspection program was conducted in October, 1953, and our second in May and June of 1954. We have enjoyed a marked reduction in fire alarms and also fire losses. We are not quite ready to start bragging, as you know fires sometimes come in bunches, but we are convinced that the Home Inspection Campaign is the principal reason for this tremendous reduction in fire alarms as well as fire losses.

In the recent City of Fresno Municipal Election, April 11th this year, there were two bond proposals voted upon. The first was to extend police facilities and the second was for the purpose of extending fire fighting facilities. I might say the police facilities were soundly defeated while the fire bonds were voted with a substantial margin to spare. I sincerely feel that the margin of difference between the vote on these two propositions is equal to the public relations and confidence which the Fire Service has created during these home inspection programs.

The Fire Service has the finest merchandise in the world to sell, and you can quote me that there is no finer place to sell it than through our home Inspection Campaign. I am sure that it gives us the finest opportunity we have ever had to improve our public relations.

Your very truly,

City of Fresno Fire Department
By Gayle V. Coger, *Chief Eng.*

Please mention FIREMEN when writing to advertisers.

What States Have the Most Large Paid Fire Departments

QUICK, now, could you name the ten States which have the most paid fire departments of 100 or more men? Which State has the most?

The answers may surprise you. The May, 1955, issue of the *International Association of Fire Fighters'* magazine, in a tabulation entitled "Working Conditions — Fire Departments — January 1, 1955," indicates that some 190 fire departments in the United States have 100 or more men. Here's a list of the top ten in alphabetical order, but to be fair you should write down your guess of their numerical standing — before you look at the answers at the bottom of this column.

California . . . Connecticut . . . Indiana . . . Massachusetts . . . Michigan . . . New Jersey . . . New York . . . Ohio . . . Pennsylvania . . . Texas . . .

Just-Published Standards

DURING the 59th NFPA Annual Meeting in Cincinnati (see page 28), a number of new and revised NFPA technical standards were approved for publication. These will be announced in NFPA *Fire News* and FIREMEN, and eventually will be published as part of the 1955 National Fire Codes. Here are a few of these standards, now available in 4¾ by 7¼-in. pamphlet form from the NFPA Publications Department, 60 Batterymarch Street, Boston 10, Massachusetts. Generous discounts are allowed for quantity purchases.

No. 6-M — "A Guide for the Organization of Fire Safety in Modern Industrial Establishments" — 20 pages, 35 cents per copy.

No. 82, 82A — "Standards for Incinerators, Rubbish Handling" — 24 pages, 35 cents per copy.

No. 220 — "Standard Types of Building Construction" — 8 pages, 25 cents per copy.

No. 403 — "Suggested Aircraft Rescue and Fire Fighting Equipment for Airports" — 36 pages, 50 cents per copy.

Answers to Questions Above

Following are the States having paid fire departments of 100 or more men: Massachusetts 23; California 16; New Jersey 14; New York, 13; Texas 12; Michigan 9; Ohio 9; Pennsylvania 9; Indiana 7; and Connecticut 6.

While California and Texas are in the first five, they still have a long way to go to catch up with the Bay State!

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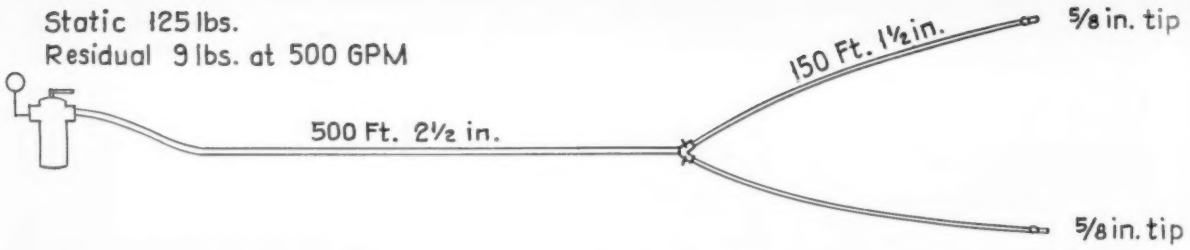


MAKING A GOOD JOB OF IT

BY WARREN Y. KIMBALL

Pressure Losses in 1½-inch Leader Lines

CHIEF Joseph A. Grantonic of the Mingo Fire Department (member NFPA) at Mingo Junction, Ohio, has sent an inquiry to FIREMEN regarding flows and pressure losses in the following layout, where two 1½-in. lines are wyed from a 2½-in. direct hydrant line. Concerning this layout he asks, what is the nozzle pressure? What is the gpm? Would you convert this to a single 2½-in. line? How would you figure friction loss? (Test data indicates that with 500 gpm flowing, hydrant pressure fell from an original 125 lb. static (non-flow) to 9 lbs.)

Obviously, the easiest and most practical way to solve the problem would be to make the layout and take Pitot gage readings of the pressure at the nozzles from which flow and pressure loss would be determined. Normally, flow also can be determined by the familiar formula $GPM = 30 \times d^2 \sqrt{NP}$ or for ⅝-in. nozzles $11.6 \times \sqrt{NP}$ giving 82 gpm at the recommended 50 lbs. nozzle pressure. This multiplied by 2 gives us 164 gpm, which is corrected by use of a co-efficient of roughness to 161.4 gpm.

While in this instance we do not know precisely what flow pressure we have available, it is possible to estimate the flows and pressure losses from the information furnished by Chief Grantonic.

It should be noted that we do not know the flow or the actual pressure at which the hydrant will give the desired flow. We do know the static pressure and the residual pressure with 500 gpm flowing from the particular hydrant. From this we can establish a flow "curve" or chart for the hydrant as explained in the NFPA manual Operating Fire Department Pumpers in the section entitled "Estimating Hydrant Residual Pressures."

Knowing the hydrant pressure drop from 125 lbs. static to 9 lbs. at 500 gpm, we can plot the hydrant residual pressure at other flows as shown on the following chart, designed to give a straight line reading on a log paper based upon the 1.85 power of numbers. (See chart.)

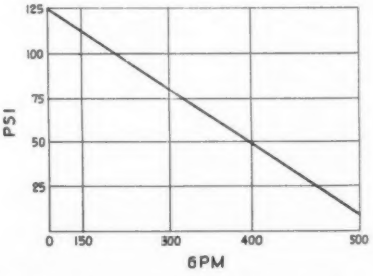
We know from published fire stream tables that the flow with ⅝-in. tips at 50 lbs. is about 80 gpm each; we also know that two ⅝-in. tips are approximately equivalent to a single ⅞-in. tip with 158 gpm at 50 lbs. and can readily determine by a glance at the chart that with about 150–160 gpm flowing we will have about 112 lbs. hydrant pressure to work with.

Part of the layout consists of dual lines of 1½-in. hose which have 3.33 times the friction loss per 100 ft. as the single 2½-in. supply line. In other words the 150 ft. 1½-in. lines have the same pressure loss as the 500 ft. 2½-in. supply line.

We know that with 160 gpm flowing, friction loss would be 6.6 lbs. per 100 ft. of 2½-in. hose based upon the empirical formula $FL = \frac{2Q^2+Q}{100}$. We have the equivalent pressure loss of 1000 ft. of 2½-in. hose or 66 lbs. friction loss if we have 50 lbs. nozzle pressure.

Also, we know from the NFPA Pump Manual that with a ⅞-in. tip friction loss approximately equals nozzle pressure in 800 ft. of 2½-in. hose. Thus with the equivalent of a 1000 ft. layout friction loss would be 1.25 x NP. We note that this calls for slightly greater flow pressure than the hydrant can supply. However, a slight drop in nozzle pressure to 48 lbs. would automatically occur. This would reduce the flow and friction loss to that which the particular hydrant can supply.

As a brief practical summary of the matter we reiterate that the loss in the two 150 ft. 1½-in. leader lines is equivalent to 500 ft. of 2½-in. hose, and that with the equivalent of a ⅞-in. solid stream tip the pressure loss will equal nozzle pressure in 800 ft. of 2½-in. hose. For fog nozzles the required flow should be provided at 100 lbs. nozzle pressure and pumpers would be needed to increase the pressure for the layout discussed. If pumpers were used, the drop in hydrant residual pressure would not be a critical factor provided that the hydrant was able to furnish the desired flow to the pumper.



Residual pressures of a hydrant may be plotted with a straight line graph based upon the 1.85 power of the flow. Line is drawn from 125 pounds (static pressure) to 9 pounds residual pressure at 500 gpm, and residual pressures may be found between these extremes. Thus, with 150 to 160 gpm flowing, residual pressure will be about 112 lbs.

"Operating Fire Department Pumpers"

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National Fire Protection Association
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FASNY Chaplain Dies

REVEREND Eugene N. Golding, chaplain of the Firemen's Association of the State of New York, died in St. Mary's Hospital, April 9. Widely recognized for his institutional work, the State of New York last year made his chaplaincy of the Rochester State Hospital a full-time job. He was the first permanent chaplain of the hospital.

"Father Gene," as he was called, was appointed FASNY chaplain in 1948 by the late President of the Association, Arthur M. Heffner. He was reappointed by succeeding presidents. He also served the Laurelton Fire Association since its founding in 1927, and was chaplain of the Monroe County Volunteer Firemen's Association.

Philadelphia Verdict

ACCORDING to a recent issue of Chemical Week, Philadelphia's Common Pleas Court No. 5 has upheld the city's government plan to award $10,000 to the family of each of the 10 fire fighters killed in the October 28 explosion at the Berg Laboratories. (See FIREMEN for December, 1954.) The case was brought to court when a taxpayer had argued that the $100,000 appropriation constituted misuse of public funds. After hearing arguments the presiding judges granted the city solicitor's motion to dismiss the case.

Other lawsuits are still pending against Berg Laboratories and Dow Chemical Company, in which the firemen's survivors charge negligence in the storage and handling of certain chemicals.

Fire Loss Bulletin

A 4-PAGE fire report titled "Unprotected Steel Supports" has been published by the NFPA Flammable Liquids Field Service. It describes a fire incident in which two horizontal gasoline storage tanks, resting on unprotected steel supports, became involved in intense fire, and the operations of the fire department which responded and made good use of limited water supply to protect exposures and still confine the blaze.

Copies of the illustrated bulletin may be obtained from the NFPA Publications Department at 35 cents each, with discounts allowed for quantity purchases.

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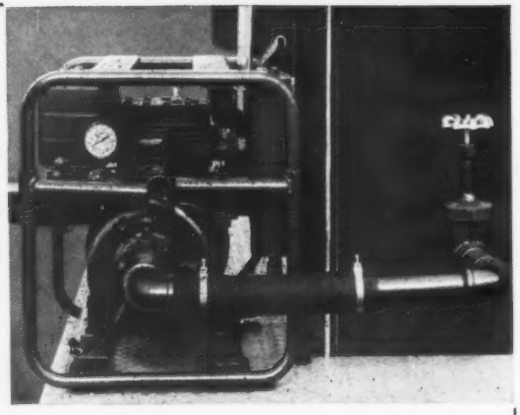
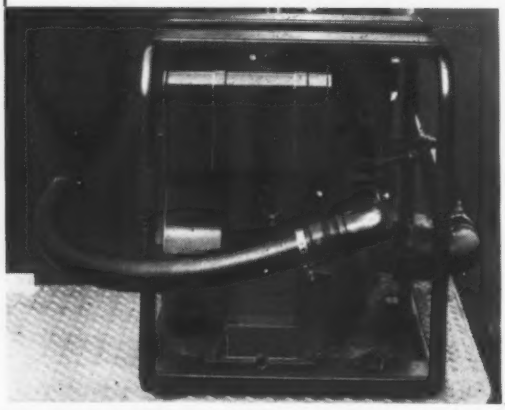
Installed on Running Board of Apparatus

Picture at right shows Hale FZZ portable pumping unit (from Suction Side) neatly installed on running board of pumper. Shut-off valve at right leading from Booster tank.





Below, view of FZZ from Discharge Side showing Discharge running into Booster line.

Pump can be easily detached to fight fire direct; as standby pump; or to supply larger pumper from source of water inaccessible to the pumper.

The FZZ will supply from draft 2 capable fire streams thru 1½" lines. Performance substantially exceeds NBFU and NFPA cap. and pressure requirements.

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Fire Administration Courses at U.S.C.

FALL semester classes in Fire Administration at the University of Southern California have been announced. They are conducted at the University's Civic Center Division of the School of Public Administration, 206 South Spring St., Los Angeles 12, Calif. For these classes, identical sections will meet on alternate days each week, to enable working firemen who have alternate days off duty each week to attend every class period. The subjects carry full university credit, which is acceptable for university certificates and degrees. Classes are given each year during Fall and Spring semesters of sixteen weeks each, and a summer session of six and ten weeks.

Fire Administration instruction which is currently scheduled to be given during Fall semester 1955–56, beginning September 19, includes the following:

PA 300 Staff Administration
PA 324 Public Personnel Administration
PA 380 Introduction to Fire Administration
PA 404 Statistics in Public Administration
PA 412 Administrative Analysis
PA 417 Human Relations in Management
PA 430 Governmental Accounting
PA 481 Advanced Fire Administration
PA 486a Regulations and Practices Concerning Dangerous Chemicals
PA 488 Fire Tactics and Strategy
PA 526a Public Personnel Policy
PA 535 Problems in Public Financial Administration

Classes are taught by regular university faculty members and by leading fire officials. Among the fire officers who will teach in this Fall semester are: C. L. Bolz, former Chief Engineer of the Pasadena Fire Department; and Harry Gross and Charles Bahme, chief officers in the Los Angeles Fire Department. A new class, "Problems in Municipal and Industrial Fire Safety," held for the first time during the immediate past summer session from June 20 to July 29, met with enthusiastic response. Instructors for this class, each teaching two weeks of the

course, were Dr. Mathew Braidech, Director of Research, National Board of Fire Underwriters; James J. Duggan, Director of Safety and Fire Protection, Carbide and Carbon Chemicals Co. and William J. Scott, Fire Marshal, Province of Ontario, Canada.

Uniform Building Code, 1955 Edition

ONE of the standard building codes, used widely as a model in preparing municipal building codes, is the Uniform Building Code sponsored by the Pacific Coast Building Officials Conference. A 1955 edition, the tenth since the code was first issued in 1927, has been published in a book identified as Volume I of the Uniform Building Code 1955. This is 5⅜ by 7⅞ inches, 384 pages, with a paper cover. Requests for information about this volume and other volumes associated with the Uniform Building Code should be addressed to the Pacific Coast Building Officials Conference, 610 South Broadway, Los Angeles 14, Calif.

Court Items in the News

THE talkative woman in Dutchess County, New York, who gained national attention by refusing to hang up her party line telephone during a fire emergency, apparently has been punished enough. At least that's what the prosecuting attorney told a Dutchess County judge, thus ending the prosecution against her. The judge stated that the woman had demonstrated that she was sorry for what she had done and agreed that she had been punished enough merely by being convicted of violating the State law.

And in a Maryland Trial Justice Court recently, a county fire marshal lost a decision to a theater manager. He had brought the theater manager to court for allowing too many children to attend a movie matinee, in violation of the county's fire prevention code, which allows only one person to stand in a theater for every four feet of standing room space. The judge ruled that the fire marshal's method of pacing the standing room space to arrive at a measurement was not accurate enough for prosecution purposes.

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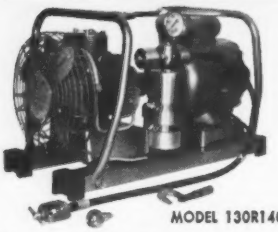

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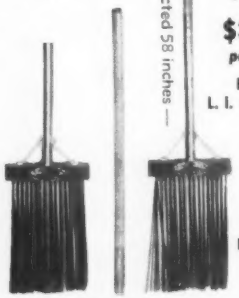

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New York Daily News Photo

Plane Crash Poses "Typical" Fire Problems

FIRE fighters responding to alarms for the crash of a Douglas DC-6 at MacArthur Airport, New York, on April 4, encountered a series of problems which might be called "typical" for such incidents. Rescue of the plane's personnel had to be attempted, heavy brush in the area was ignited by the fire which started immediately after impact, the 2,000-gallon gasoline fuel supply required use of combined extinguishing agents (see NFPA No. 403, 1955), and the muddy, marsh terrain was a hindrance to heavier apparatus. Yet, although the plane's three occupants were killed by the impact, which also led to complete destruction of the plane, the efficient actions of fire fighters might well have meant rescue to any survivors.

When the plane took off from the airport, located about 5 miles North of Sayville, three commercial airlines pilots were aboard, taking their annual "qualification" tests. After traveling about 2,200 feet down the runway and rising to 75 feet, the aircraft began a right turn, lifting to about 100 feet. As it was completing a 90-degree turn and banked at about 90 degrees, it suddenly appeared to flip over, then dived into the ground, bursting into flames on impact.

The control tower gave the alarm immediately to the fire department of the Sperry Gyroscope Company (stationed at the field), headed by Chief Aircraft Crash Rescue Officer H. Karrmann. He in turn radioed for assistance from the Lakeland Fire Department.

Sperry fire fighters were attempting rescue within 1½ minutes after the alarm. They responded in two Ansul Jeeps, 2 Dodge trucks, a U.S. Air Force Class 150 (carbon dioxide) crash truck and a Class 155 (high pressure water fog) crash truck. Lakeland fire fighters arrived with two high pressure pumpers and a pumper mounted on an Army-type Chevrolet truck. Altogether 55 fire fighters responded, in addition to a nurse in a Sperry ambulance.

The two jeeps took position at the nose end of the aircraft, and while four fire fighters opened up a path to the fuselage with the dry chemical, Chief Karrmann entered the plane and found the bodies of the occupants. He then withdrew and attempts were made to protect that area of the aircraft from fire. In the meantime the two Dodge trucks and the Class 150 and 155 had found difficulty in making proper approach through the marsh area. (This is the third aircraft crash incident reported to NFPA in the past 6 months in which apparatus lacked the necessary "flotation" to reach a crash site.)

The 155 crash truck was properly positioned, however, and 200 ft. of 1½-in. hose was stretched initially, for high pressure fog application on the flames, then for foam application from a pick-up nozzle. On the opposite side of the fuselage, 300 ft. of 1½-in. hose was used to apply a foam blanket. The Class 150 crash truck then approached the right side of the fuselage to

apply 3,000 pounds of carbon dioxide, then followed this attack with 100 gallons of premixed foam.

Lakeland apparatus arriving on the scene reported to Chief Karrmann, who ordered the personnel to keep a water supply in the Dodge trucks, thus assuring continual foam application. Magnesium burning around the crash site caused several flash backs but the major fire was under control in approximately 30 minutes after the crash occurred. By this time foam application covered an area about 50 ft. in diameter with the plane in the center. Sperry apparatus was returned to quarters, except for one jeep, but Lakeland apparatus remained to apply foam and sand until the fire was extinguished.

Special extinguishing agents used included 3,000 pounds of CO_2, 1,290 lbs. of dry chemical, 100 gallons of premixed foam, 165 gallons of foam liquid mixed with 2,500 gallons of water, and 120 lbs. of "Metal-X."

NFPA Welcomes:

The following fire chiefs and fire departments who have joined the Association. Current NFPA Fire Department membership totals, 2,089 fire departments and 24,785 men.

British Columbia: Chief W. H. Johnston, Silverton Vol. Fire Dept., Silverton.

California: Chico Fire Dept., Chico.

Kentucky: Fayette County Fire Dept., Northern Belt Line, Lexington; Chief Gordon Glenn, Princeton Fire Dept., Princeton.

Massachusetts: Pembroke Fire Dept. Co. No. 1, Bryantville; Easton Fire Dept., North Easton; Stoughton Fire Dept., Stoughton; Ware Fire Dept., Ware.

Michigan: Decatur Fire Dept., Decatur.

Minnesota: Chief R. Petrick, Glencoe Fire Dept., Glencoe.

New Hampshire: Chief Kenneth P. McInnis, Lincoln Fire Dept., Lincoln.

New Jersey: Chief Joseph Ferriero, Dumont Fire Dept., Dumont.

New York: Akron Fire Company, Inc., Akron.

Saskatchewan: Radville Fire Dept., Radville.

West Virginia: Chief Mike Dimoff, Berkeley Springs Vol. Fire Dept., Berkeley Springs; Chief R. E. Conrad, Huttonsville Vol. Fire Dept., Mill Creek.

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No. 550 — "SEAMLESS"
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Many Fire Companies "On the Move" for Brooklyn Conflagration

AN ESTIMATED $2,000,000 conflagration in the Greenpoint area of Brooklyn, New York, and a simultaneous fire of third alarm proportions on May 12 caused response and covering actions of nearly 100 fire companies. According to Jerry Daly's column in "The Chief," New York Civil Service Newspaper, it also caused the largest concentration of fire apparatus in that city since a huge paint fire in September, 1919.

The conflagration (see *United Press* photos above) began with an explosion in a sawdust hopper of a lumber mill and when the first piece of apparatus arrived the fire was of such proportions that the lieutenant in command immediately called for "a second." One minute later a Division Chief arriving at the scene called for third alarm response and within twenty more minutes fourth and fifth alarm responses were demanded. Total calls brought 40 pumpers to the Greenpoint site, including 18 from Brooklyn, 13 from Manhattan and 9 from Queens. In addition two rescue units, six ladder trucks and Communications Unit No. 1 were called, in addition to the fire boats Hewitt, Mitchel, Willett and New York's newest million-dollar fire boat the "McKean," responding to her first major fire engagement. Fire boats were blocked by low water. Searchlight units from Brooklyn and Queens also responded.

While all of these units were moving into action a fire involved eight multiple dwellings in another section of Brooklyn, eventually necessitating a "third alarm" response. Shortly after, while the conflagration was still underway, fire boat assistance was requested from Jersey City and the "Harvey" was dispatched to give this aid.

The Greenpoint conflagration involved two city blocks containing an assortment of industrial plants, stores, mills, and various storage occupancies and yards. It was near the Newton Creek area where many oil installations are located. Sixty-one fire fighters were injured before the blaze was finally controlled.

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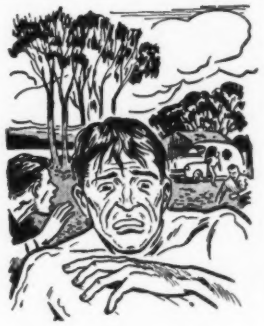

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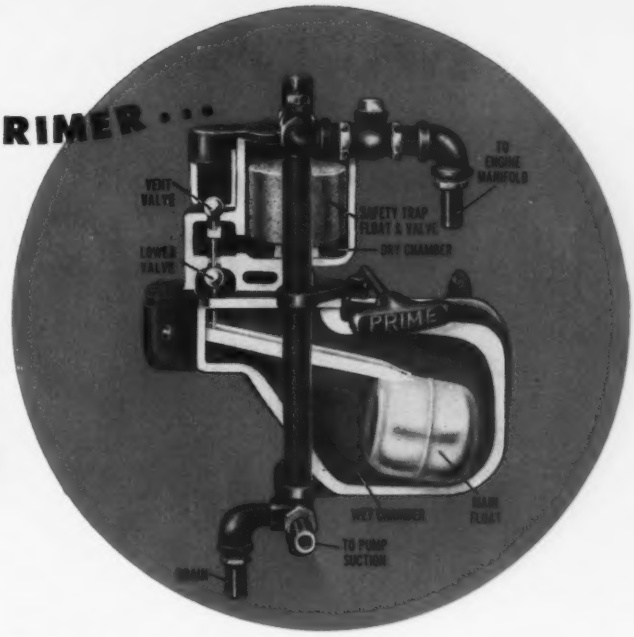

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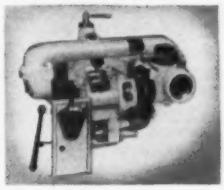
Here's a primer that *cuts priming time in half* on most new pumpers! And it utilizes the same time-tested engine vacuum principle that has proved its dependability for over a third of a century.

Not affected by engine age or wear, this primer always operates with original "like new" efficiency. Trouble-free in basic design and construction, it eliminates the nuisance of maintenance and lubrication required by ordinary primers. On standard installations it gives you frost-proof protection.

Exclusive, patented dual-float construction positively eliminates any possibility of water passing into the engine—another vitally important feature!

In every way, this new model primer keeps pace with the larger displacement engines now in common use on pumpers . . . and it's just one of the superior features you get on Barton-American Fire Pumps.

For complete details, write for Front-mounted Pump Bulletin 8330-B or Midship Pump Bulletins 8733 and 8734—and mention your interest in faster priming!



Choose either a front or midship pump—both include faster vacuum priming system.

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The new, inexpensive A–Z Hose Washer drains and rinses the hose as it washes. 4 Roto-jets constantly spray hose with clean, fresh water — all sediment is flushed through collecting pan and down the drain. Semi-automatic, the A–Z is operated by just one man. No strain. No fatigue. Turn tables keep the hose OFF the floor. They're excellent for re-loading truck (several lengths may be stacked on each) or loading the hose dryer.

Circul-Air

FIRE HOSE DRYER

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The patented, electrically operated Circul-Air hose dryer circulates pre-warmed fresh air through loosely coiled hose at the rate of 5 to 6 air changes per minute. Saves floor space, hard work and lengthens hose life! No other drying method is so fast — so economical — so easy to use.

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Highlights of the 59th NFPA Annual Meeting

A TOTAL of 1,268 NFPA members and guests attended the 59th Annual Meeting at the Netherland Plaza Hotel in Cincinnati, Ohio, May 16–20. The diversified 5-day program featured many addresses and discussions of timely fire protection topics, in addition to some entertaining social events. A pictorial report of the meeting appears in the June issue of NFPA *Fire News*.

On Thursday morning, Dave Garroway's nation-wide network television show covered several demonstrations of a steam pumper on the fire training grounds by Chief Barney J. Houston's Cincinnati Fire Department. This was a horse-drawn type 1883 "third class" Ahrens Fox 500 gpm pumper with a 3-in. suction intake and 2½-in. discharge connections. It was loaned to the NFPA for this special demonstration by the Arcanum Fire Company, Arcanum, Ohio, headed by Chief Edgar Troxel.

Also included in the TV programs were interviews with NFPA General Manager Percy Bugbee; NFPA President T. Seddon Duke, and NFPA Vice President Chief Henry G. Thomas. In addition to the network program there were several local television broadcasts by WLW-T of Cincinnati.

A number of fire fighters from Lexington, Kentucky, and from other municipalities in the region attended the numerous technical sessions. The session devoted to "Municipal and Rural Fire Protection" featured an address by Chief C. Gray Burnett, President of the International Association of Fire Chiefs. (See page 14.) Also featured in this session was an address by Warren Y. Kimball, Manager, NFPA Fire Services Department and Editor of FIREMEN, who discussed current operational developments in the Boston Fire Department. Another major talk was given by L. G. Keeney, Chairman of the NFPA Committee on Farm Fire Protection, who analyzed the rural fire problem in Midwestern states.

A number of the major addresses of the 5-day meeting will be published in FIREMEN and the NFPA *Quarterly* in coming months. Readers should also watch for announcements of new and revised technical standards and the complete new edition of the National Fire Codes, which will be published as a result of actions taken during this 59th Annual Meeting.

Next year's meeting, the 60th, will be held in Boston, Massachusetts, with the Hotel Statler as headquarters.

Watching or taking part in the television program at the Cincinnati fire training grounds were: (*left to right*) NFPA President T. Seddon Duke (also President of the Star Sprinkler Corporation, Philadelphia, Pennsylvania); Charles J. Scott, State Fire Marshal of Ohio; Emmett T. Cox, Secretary of the NFPA Committee on Firemen's Training and Field Officer, Fire Prevention Department, Western Actuarial Bureau; NFPA General Manager Percy Bugbee; and NFPA Vice President Henry G. Thomas, Chief of the Hartford, Connecticut, Fire Department.

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1955 Ford — 750 GALLON PUMPER — For City or Rural Service

ALL CHAMPIONS ARE BUILT TO THE SAME HIGH STANDARDS OF ENGINEERING

The beautiful Champion Fire Apparatus, illustrated above, is an unbeatable value in a 750 gallon Class A pumper which conforms to all specifications of the National Board of Fire Underwriters and all State Insurance Bureaus. Delivers 750 gallons per minute at 150 lbs. pressure, 525 GPM at 200 lbs., 375 GPM at 250 lbs. to meet all requirements for Class A Underwriter rating, the highest rating given to any pumper, no matter whether you pay 25% to 50% more than our low price.

PUMP — The Darley Champion Fire Pump, manufactured exclusively by W. S. Darley & Co., is the Type SH750, 3 stage centrifugal, which delivers, in addition to Underwriter performance, pressures up to 1000 lbs. for high pressure fog fire fighting. You get everything you'll ever need in fire fighting efficiency when you get a Champion Pumper. And if it's big volume you want this SH750 will actually deliver 900 gallons per minute pumping water from a river or lake and 1350 GPM pumping from a hydrant which has average to good flowing pressure.

You can select any commercial chassis with engine capable of delivering 160 horsepower or more.

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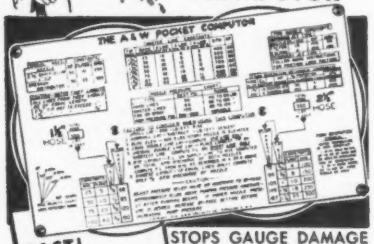

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Fire Training in the Months Ahead

Arkansas: The Arkansas State Fire School will be held at Little Rock, Arkansas, July 11–14. Write to J. C. Ruppert, State Supervisor, Trades and Industrial Education, 18th and Spring St., Little Rock.

Arizona: The Arizona State Fire School will be held at Phoenix Technical School, October 20–22. Write to Director Jake Siken, Battalion Chief, Phoenix Fire Department.

Colorado: The 1955 Convention of the Colorado State Firemen's Association will be held at Estes Park, June 8–11. Write to Secretary Arthur J. Becker, 4250 Stuart St., Denver 12, Colorado.

Delaware: The 7th Annual Short Course for Firemen will be held in Camden and Wyoming, July 16–17, and July 23–24 respectively. Write to Frank M. Forstburg, Delaware State Board for Vocational Education, 511 West 8th Street Wilmington.

Florida: Two sessions of the Florida State Fire College will be held May 23-June 24 and July 23–24. Write to W. H. Barnett, Superintendent, Florida State Fire College, P. O. Box 785, Ocala.

Georgia: Georgia State Fire College in Atlanta, an Instructors' Course will be held June 6–7, and an Arson Investigators' Course will be held July 11–12. Write to Harry Phillips, Director, Vocational Service, State Department of Education, 642 Killian Street, Atlanta.

Illinois: The Illinois State Fire School will be held at Champaign, June 13–17. Write to George W. Harper, Director, Illinois Fire College, University of Illinois, Urbana, Illinois.

Indiana: The 22nd Annual Indiana State Fire School will be at Purdue University, September 13–16.

Iowa: The 9th Annual Fire Inspectors' School will be held at the College, August 2–5. Write to Mark Brosier, Supervisor, Firemanship Training, 110 Marston Hall, Iowa State College, Ames.

Michigan: The Michigan State Fire School will be held at Ann Arbor, June 13–17. Write to M. D. Whale, Supervisor of Public Service Training, Office of Vocational Education, P. O. Box 928, Lansing, Michigan.

Alert Firemens Association's second annual Volunteer Firemen's Fire Training School to be held September 10th & 17th in Lansing. Write to Chief Earl Miller, Gen. Chairman, Lansing Township Fire Department, Lansing, Michigan.

Missouri: The Central Missouri Fire Conference will be held at the University of Missouri in Columbia, July 26–28. Write to Director Joseph I. Fetters, University of Missouri, Columbia.

Montana: The State Fire School will be held at Polson, August 24–27. Write to Chief Clayton Brown, Polson Fire Department, Polson.

Nebraska: Regional schools are scheduled for Ogallala, June 12; and Chadron, June 19. The 73rd Annual Convention of the Nebraska State Volunteer Firemen's Association will be at the Hotel Yancey, Grand Island, October 17–19.

New Mexico: The Annual New Mexico Fire College will be held in Alburquerque, June 6–8.

Ohio: Annual Conference of the Central Western Firemen's Association of Ohio will be held at Eaton, June 22.

The Ohio State Fire School will be held at Columbus, September 12–16. Write to Robert M. Reese, Supervisor, Trade & Industrial Education Service, Department of Education, 220 S. Parsons Ave., Columbus, Ohio.

The annual conference of the Ohio Fire Chiefs' Association will be at the Commodore Perry Hotel in Toledo, August 18–20. Write to Chairman A. F. Papenhagen, 545 North Huron Street, Toledo 5.

Ohio State Firemen's Association Convention August 19–20. Write to General Chairman, Chief Robert A. Metz, 3673 Eyrick Ave., Mack Fire Dept., Cincinnati 11.

Pennsylvania: As announced in the April issue of *Firemen*, the Pennsylvania State Fire School is now in operation at Lewistown. Courses scheduled include: Standard Fire Fighting, June 20–24; Advanced Fire Fighting, July 11–15; Annual Fire School Round-Up, August 1–5; Fire Service Instruction Course, August 8–12; Fire Apparatus Operation and Maintenance Course, August 22–26; The same sequence of courses will follow during the months of September and October. Further information may be obtained from Edgar A. Spotz, Advisor, Fire Service Training, Public Service Institute, Lewistown, Pennsylvania.

Texas: The 26th Annual Firemen's Training School will be held at Texas A & M College, College Station, July 10–15. Write to Colonel H. R. Brayton, Director, Firemen's Training School, at the College.

Utah: The 11th Annual Firemen's Training School will be at the Salt Lake City Fire Department, June 16–18. Write to Assistant Chief Don E. White, Salt Lake City Fire Department

West Virginia: The 25th Annual West Virginia State Fire School will be held at West Virginia University in Morgantown, July 25–29. Write to R. E. Hanna, Jr., Director of the West Virginia Fire School, at the University in Morgantown.

Wisconsin: The State Fire School at Madison will be held on August 15–17. Contact H. C. Thayer, Chief, Trade and Industrial Education, State Board of Vocational and Adult Education, Madison.

The FW Eductor is a *discharge* side proportioner. Comes in 1½" and 2½" sizes. They operate efficiently on pressures ranging from 75 to 175 p.s.i. at the Eductor inlet.

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Rockwood FW Eductor is the simplest form of proportioning you can buy. Ideal for municipal fire departments, oil refineries and industrial plants, it can be attached between discharge gate of a fire truck and hose line, or between two lengths of hose.

Be prepared. Put this great fire fighter to work for you. Specify Rockwood FW Eductor when you order a fire truck.

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FFF Nozzle comes with Foam screen and solid Foam stream shaper.

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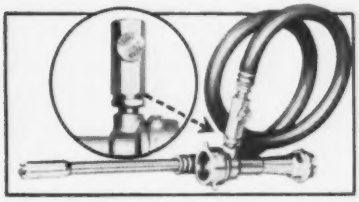
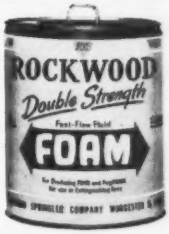


The Variable FW Metering-Check Valve on the Rockwood Eductor is highly versatile, and is furnished with each FW Eductor. It incorporates both the Metering Valve and Ball Check Valve in one unit, and meters material into the hose line in any proportion from 1% through 6%.



Rockwood Double-Strength Foam Liquid, 3 parts mixed with 97 parts water, forms a solid FOAM blanket that quickly re-seals itself. Available in 5-gallon or 50-gallon drums.

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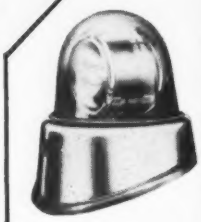

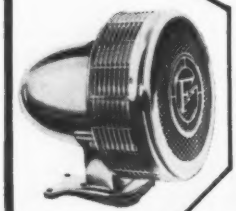

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New Comic Book

ANOTHER colorful "Sparky" comic book has been published by NFPA and is now available to fire departments who want simple instructional material for children of elementary school age. This new edition has been prepared especially to explain the organization and operation of modern fire departments.

In addition to presenting some fire prevention fundamentals, "Sparky" describes the growth of fire departments from early hand engine days to the present. There are a number of illustrations which show how fire apparatus improved with the passing years, together with descriptions of what today's fire fighter accomplishes in fire fighting, house-to-house inspections, and other service to the community.

The 16-page booklet may be obtained for 5 cents per copy; $45 per thousand copies; $40 per thousand for 10,000 copies or more; and $35 per thousand for orders of 25,000 or more. Successive discounts will be allowed for greater quantity purchases. All prices are F.O.B. Boston, Massachusetts.

The back cover of the comic book has been left blank so that fire departments or other organizations may imprint their own names and messages. The NFPA will imprint these covers for orders of 1,000 or more, with an additional charge of $2.50 for the first thousand, and $2 for each additional thousand, plus 20 cents per line of copy.

Order your copies of the comic book from the NFPA Publications Department, 60 Batterymarch Street, Boston 10, Massachusetts.

Rescue Squad Anniversary

THE 8th Annual Convention of the International Rescue and First Aid Association is scheduled to be held in Alexandria, Virginia, October 27–29. Since Alexandria's Rescue Squad No. 1 will be celebrating its 25th anniversary special preparations are being made for the convention, including a number of prize events, such as parades and first aid contests.

Further information may be obtained by writing to the Chairman of the Convention Committee, T. C. McCaffrey, c/o Alexandria Rescue Squad No. 1, P. O. Box 2098, Potomac Station, Alexandria, Virginia.

For the smaller community—
POSITIVE, INSTANT CONTACT with the

FIRE CHIEF

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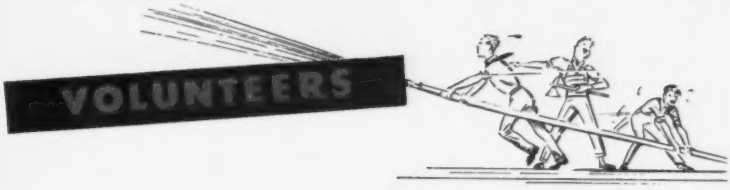

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THE BOX IS POSITIVE
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What's New in Fire Equipment, Catalogs and Bulletins

New Catalog on Helmets

Catalog No. 35 has just been published by Cairns & Brother, Inc., makers of fire fighters' helmets in Allwood, Clifton, New Jersey. Copies may be obtained free from the manufacturer at that address.

Hose Jacket Treatment

Boston Woven Hose and Rubber Company, P.O. Box 1071, Boston 3, Massachusetts, has announced development of a different treatment to resist mildew of fire hose jackets. According to the manufacturer, the revised treatment improves the flexibility of the hose without sacrifice of treatment efficiency. It is offered in tan color. Picture above shows newly treated hose at left, and at right is a piece of hose with old method of treatment. The new treatment is being incorporated into all of the manufacturers finished treated stock and samples are available upon request to the manufacturers office at the above address.

Do you have the story on the new John Bean apparatus providing high-pressure fog, volume and "Sno-foam"? Write to *John Bean Div.*, Dept. 126, Lansing 4, Michigan. . . . Look into the new E-Z Grip attachment for 2½-inch nozzles now offered by *Akron Brass Mfg. Co., Inc.*, Wooster, Ohio. . . . Check with *Weller Bros.*, 1150 Madison Ave., Memphis, Tenn., for new and used ambulance and rescue cars on Pontiac, Ford and Chevrolet chassis. . . . Be prepared now for water search and rescue. Get the facts for your department from *Aquatic Equipment Co.*, Box 563, Des Moines, Iowa. . . . New U. S. Navy portable megaphone and amplifier systems at reasonable cost are available at *J. Jacob Shannon*, 214 North 22nd Street, Philadelphia 3, Pa.

You can sell fire prevention to school children the year 'round by talking up NFPA Sparky's Fire Department. . . . Is your department equipped with one or more of the Halligan multi-purpose forcible entry tools? Write to *M. A. Halligan*, 1505 Metropolitan Ave., New York 62, N. Y. . . . When you think of badges — in regular size and miniature — remember the name of Blackinton for quality. Ask your equipment dealer or uniform supplier to show you badges by *V. H. Blackinton & Co., Inc.*, Attleboro Falls, Mass.

Chiefs praise Bi-Kleen for keeping fire hose "inspection clean." Does a fast job of removing oil, dirt and grease from the floor, too. You can get an inexpensive trial size from *Bi-Lateral Fire Hose Co.*, 20 North Wacker Drive, Chicago 6, Illinois. . . . Have you looked into the many advantages of Circul-Air "A-Z" fire hose washer? Descriptive folder free from *Circul-Air Corp.*, 575 East Milwaukee, Detroit 2, Michigan. . . . The Seagrave all-steel, 65-foot aerial ladder on a commercial truck chassis may be just what you need. For full details, drop a line to *The Seagrave Corp.*, Columbus 7, Ohio. . . . Have you seen the Siebert Centennial emergency (ambulance) cars on 1955 Ford chassis? Specifications on standard and custom models promptly mailed from *Shop of Siebert Associates, Inc.*, Waterville, Ohio.

A new line of Red Devil ¾-inch and 1-inch booster hose is announced by *Thermoid Company*, Trenton, N. J. . . . Is lawn care a chore at your station house? Look into the new heavy-duty, power mower and mulcher specially priced for you by *Precision Equipment Co.*, 3716 N. Milwaukee Ave., Chicago 41, Ill.

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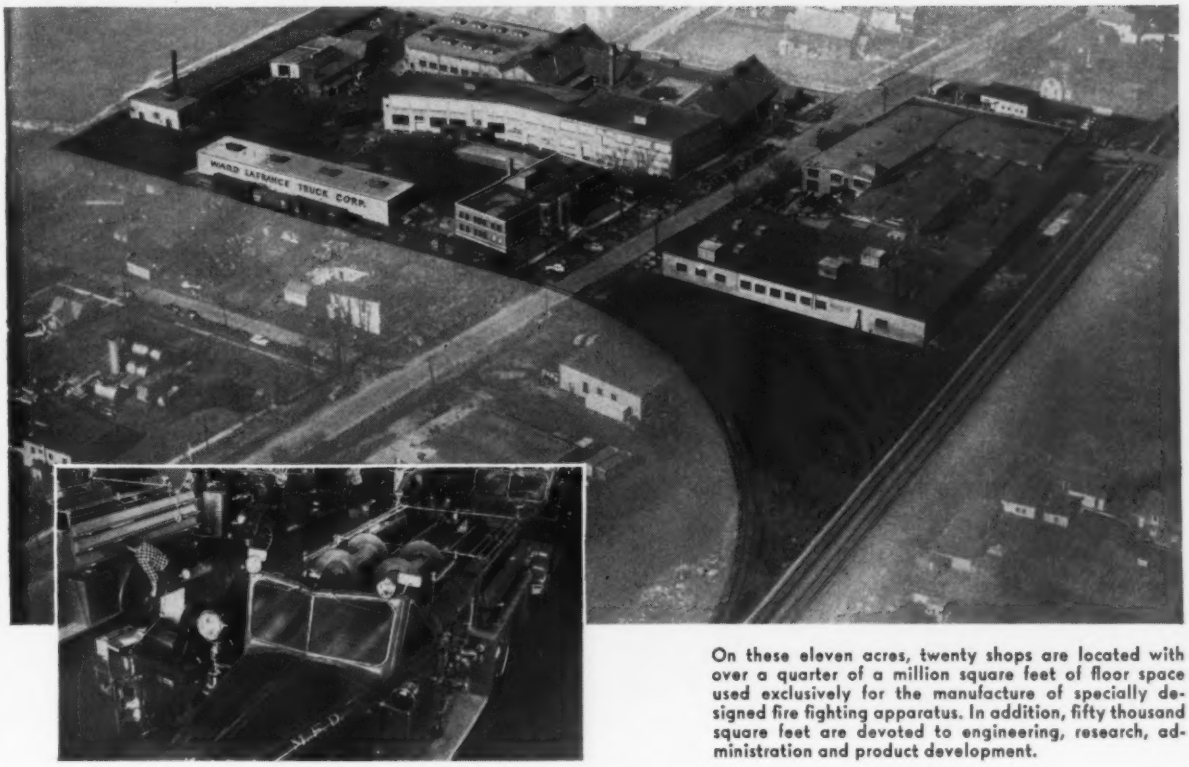

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- ***Suggestion:*** Ask your fire chief or the officer who commands your station if the department can purchase a copy of the Handbook for your fire station library.
- ***Suggestion:*** Know the "reasons why" in your fire fighting profession. Study the NFPA Handbook for factual information on all phases of fire control.

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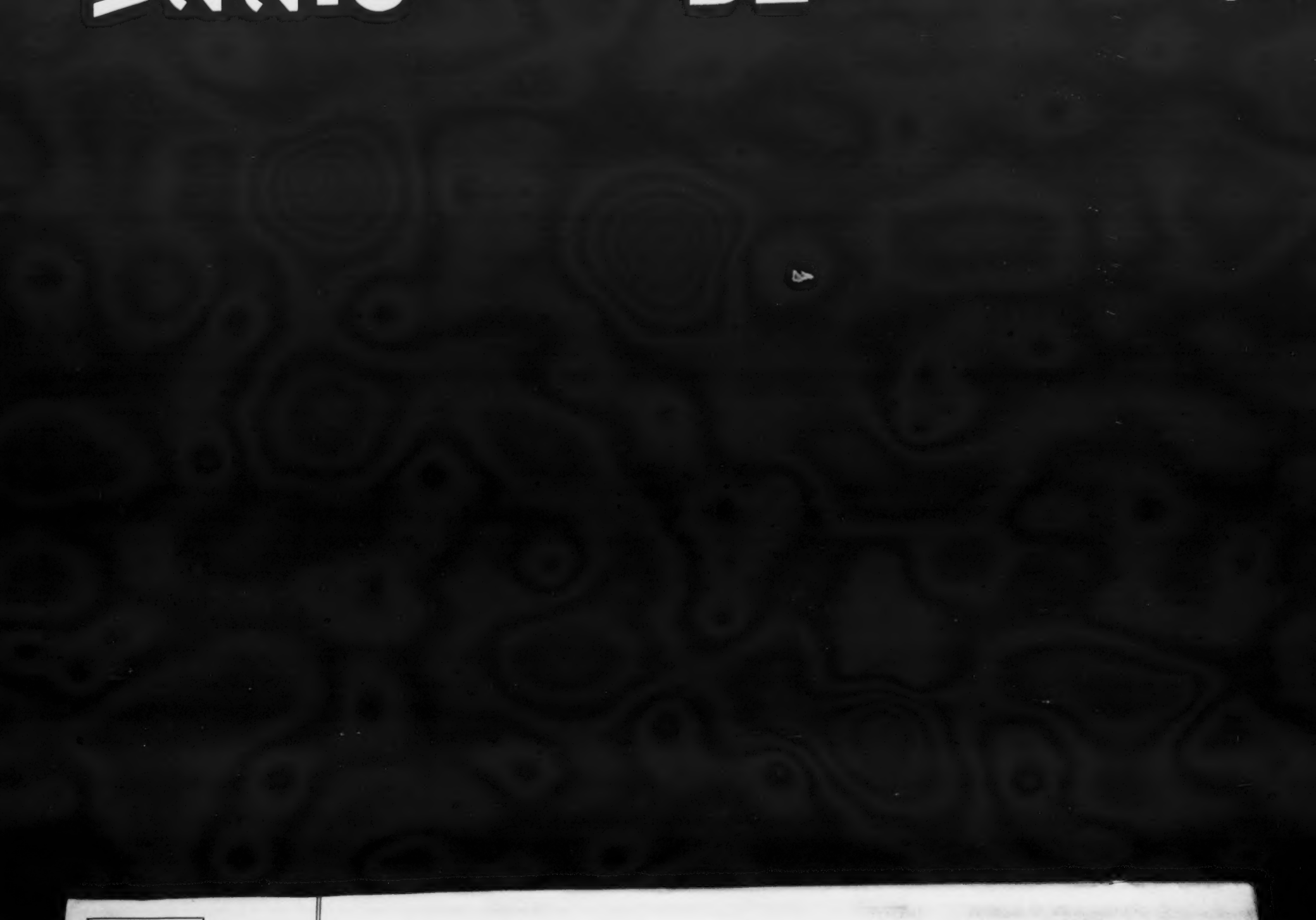
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